

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/010976

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B01J8/02 B01J19/24 F28D9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B01J F28D F28F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 943 669 A (DANG VU QUANG ET AL) 24 July 1990 (1990-07-24) abstract column 6, line 38 - line 57; figures 2a-2c	1-10
X	US 4 985 208 A (FUJITA TOSHIO ET AL) 15 January 1991 (1991-01-15) abstract column 4, line 51 - line 65; figure 3	1-10
X	WO 01/51200 A (BASF AG ; HECHLER CLAUS (DE); KAMMEL ULRICH (DE); MACHHAMMER OTTO (DE)) 19 July 2001 (2001-07-19) abstract page 7, line 7 - line 23; figure 1B ----- -/--	1-10

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

- *T* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the International search

4 January 2005

Date of mailing of the International search report

24/01/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Thomasson, P

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/010976

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	CH 279 444 A (ROVER CO LTD) 30 November 1951 (1951-11-30) page 1, line 61 - page 2, line 39; figures 2,4	6-10 1-5
X A	----- US 4 183 403 A (NICHOLSON TERENCE P) 15 January 1980 (1980-01-15) abstract column 1, line 20 - line 35	6-10 1-5
X A	----- FR 2 538 889 A (KLEIN ALB GMBH CO KG) 6 July 1984 (1984-07-06) abstract page 1, line 1 - line 20 page 6, line 1 - line 8 claim 1; figures 8-11	6-10 1-5
X A	----- US 3 430 694 A (CARDELL OLOF) 4 March 1969 (1969-03-04) column 1, line 10 - line 50 claim 1; figure 1	6-10 1-5

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/010976

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4943669	A	24-07-1990	FR 2633284 A1 DE 68902016 D1 DE 68902016 T2 EP 0348292 A1 JP 2067231 A JP 2668265 B2	29-12-1989 13-08-1992 03-12-1992 27-12-1989 07-03-1990 27-10-1997
US 4985208	A	15-01-1991	JP 1957409 C JP 6089047 B JP 63238101 A CN 88101706 A ,B FR 2612800 A1 KR 9405110 B1	10-08-1995 09-11-1994 04-10-1988 05-10-1988 30-09-1988 10-06-1994
WO 0151200	A	19-07-2001	AT 266615 T AU 3540501 A DE 50102261 D1 WO 0151200 A2 EP 1246788 A2	15-05-2004 24-07-2001 17-06-2004 19-07-2001 09-10-2002
CH 279444	A	30-11-1951	NONE	
US 4183403	A	15-01-1980	BE 833462 A1 CA 1041992 A1 CH 593471 A5 DE 2540144 A1 FR 2309817 A1 IT 1047413 B JP 58000185 U JP 59028225 Y2 JP 51091046 A NL 7510962 A SE 7509633 A	16-01-1976 07-11-1978 30-11-1977 19-08-1976 26-11-1976 10-09-1980 05-01-1983 15-08-1984 10-08-1976 10-08-1976 09-08-1976
FR 2538889	A	06-07-1984	DE 3300017 A1 FR 2538889 A1 JP 60036893 A	12-07-1984 06-07-1984 26-02-1985
US 3430694	A	04-03-1969	BE 689448 A CH 451217 A DE 1501489 A1 GB 1136297 A NL 6615742 A NO 117594 B	14-04-1967 15-05-1968 15-01-1970 11-12-1968 10-05-1967 01-09-1969